

## **Virginia's 2016-2017 Chesapeake Bay Nutrient and Sediment Reduction Milestones**

The Chesapeake Bay TMDL calls for an implementation approach that includes the development and submittal of two-year “milestones” that detail administrative, policy, regulatory and implementation actions that will achieve the benchmark nutrient and sediment reductions called for by 2017 and 2025.

The milestones contained in this document addresses the range of nutrient and sediment sources and are divided into two separate elements. First, the attached table proposes a series of “programmatic milestones” that detail the actions of state agencies and others that will occur over the next two years that either meet TMDL and Virginia’s Watershed Implementation Plan (WIP) commitments, or propose actions that will be taken to enhance existing programs to put Virginia in a better position to meet the TMDL nutrient and sediment reduction targets. A second element of the milestones is the so-called “input deck” that predicts levels of best management practice implementation based on expected funding, historical adoption rates for the various practices, and anticipated program enhancements. It also includes expected wastewater plant discharge amounts. Combined, these implementation actions produce the nutrient and sediment reduction expectations during the milestone period. The implementation levels for land based best management practices are described in the attached spreadsheet.

It is important to remember that these actions and implementation figures are based on information available in the spring of 2016 and they may be adjusted during the milestone period to address new information, changed policy or budget actions or other factors. Our primary objective is the total reductions of nutrients and sediments reaching the Bay and its tidal tributaries. These reduction goals are shown in the attached charts. The exact mix of practices employed at the end of the milestone period may differ from the predictions we are able to make at the beginning of the milestone period due to variations in weather, agricultural commodity trends, developer preferences, and other factors.

If you have questions regarding any elements contained in these documents, please contact James Davis-Martin, Virginia Department of Environmental Quality ([james.davis-martin@deq.virginia.gov](mailto:james.davis-martin@deq.virginia.gov)).

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
<b>Agriculture including CAFO/AFO</b>				
12/31/2017	<b>A.1.</b> Track and report the progress of the 100% funded stream exclusion initiative (Phase I WIP, pg. 63)	Report number of acres of vegetative buffers established, linear feet of stream banks protected, and number of animal units excluded	DCR	DCR, in consultation with Soil and Water Conservation Districts, agricultural producers and other stakeholders will continue to advocate for funds to implement existing SL-6 pending cost-share applications.
12/31/2017	<b>A.2.</b> Continue development of the Resource Management Program and promote adoption in coordination with industry partners (Phase I WIP pg. 59, Phase II WIP pg. 19)	RMPs on at least 10,000 acres of agricultural operations per year	DCR	DCR will continue to enter into contracts to develop Resource Management Plans.
12/31/2017	<b>A.3.</b> Tabulate the number of cost shared and voluntary agricultural BMPs both existing and planned in RMPs	Produce an annual RMP report that tabulates existing and scheduled BMPs	DCR	
12/31/2017	<b>A.4.</b> Project the necessary pace of agricultural BMP implementation needed to meet 2025 WIP reduction targets	Produce an Agricultural Needs Assessment report at least bi-annually	DCR	
12/31/2017	<b>A.5.</b> Increase the number of nutrient management plans on unpermitted dairies (Phase I WIP, pg. 76)	20 new small dairy plans per year  WIP Goal 75% of facilities participating by 2025	DCR	It is estimated that there are 370 unpermitted dairies in Virginia's Bay watershed, 32% of those have current nutrient management plans.

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

<b>Target Date</b>	<b>Milestone (WIP page reference)*</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
6/30/2017	<b>A.6.</b> Increase the number of nutrient management plans on unpermitted beef operations	Survey to determine the number of unpermitted beef operations	DCR	
6/30/2016	<b>A.7.</b> Issue/re-issue contracts to develop nutrient management plans on unpermitted dairies	\$265,000 in contracts with private nutrient management planners	DCR	
12/31/2017	<b>A.8.</b> Increase nutrient management plans on small farms	15,000 new acres on small farms under nutrient management. These will include a number of small dairies and beef operations related to Milestones A.5. and A.6.	DCR	
12/31/2017	<b>A.9.</b> Project the number of additional/expanded poultry houses and assess any resulting increase in nutrients	Annually report additional or expanded poultry houses and evaluate impacts to WIP allocations based on site-specific factors.	DEQ/DCR	Site specific factors may include whether houses are new or replacement, type of litter end-use, litter transport, etc.
12/31/2017	<b>A.10.</b> Conduct continuing education classes and administer nutrient management certification examinations	6 classes and two exams each year	DCR	
12/31/2017	<b>A.11.</b> Renew relationship with fertilizer companies to encourage and track precision agricultural application (Phase I WIP, pg. 65)	45,000 acres of precision agriculture each year	DCR	
12/31/2017	<b>A.12.</b> Spatial reporting of	Tracking module to report	DCR	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	nutrient management plan data	spatially		
6/30/2015	<b>A.13.</b> Advance Healthy Waters program geo-referenced data sets	Update Bay watershed data sets	DCR	
8/31/2016	<b>A.14.</b> Convert applicable CAFO VPA permits to VPDES permits  (Phase I WIP pg. 74, Phase II WIP pg. 18)	4 VPDES permits issued in the Bay watershed	DEQ	Four draft permits are being processed in the Bay watershed; DEQ expects to complete the draft permit packages for EPA review by May 2016.
7/31/2016	<b>A.15.</b> Complete evaluations of the remaining small AFOs in Virginia's portion of the Chesapeake Bay watershed in accordance with the Small AFO Strategy developed in cooperation with VDACS (Phase I WIP, pg. 76)	Completion of evaluations on the remaining 137 poultry farm operations.	DEQ/ VDACS	
12/31/2017	<b>A.16.</b> Follow up with small AFO owners that are implementing remedies as initiated under the Small AFO Strategy.	Track and report program results annually. Follow-up where necessary	DEQ/VDACS	Continue to follow up with the small AFOs owners that are implementing remedies as initiated under the Small AFO Strategy.
12/31/2017	<b>A.17.</b> Provide outreach opportunities related to the Small AFO Strategy.	Outreach opportunities	DEQ/VDACS	Provide opportunities for education and promote the Small AFO Strategy.

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
7/1/2016	<b>A.18.</b> Develop a spatial database to track Agricultural Stewardship Act (ASA) complaints.	ASA complaint tracking module	VDACS/DCR	
<b>Urban including MS4</b>				
6/30/2016	<b>U.1.</b> Reissue 6 final MS4 individual permits (Phase I WIP, pg. 93)	All final permits issued	DEQ	
6/30/2016	<b>U.2.</b> Implement Virginia Conservation Assistance Program (VCAP) residential scale urban BMP cost share program.	Report installed practices in annual progress	DEQ/SWCDs	This program provides cost-share for residential scale urban BMPs and is intended to help achieve reductions in the unregulated urban sector and on lands not controlled by MS4s.
9/1/2016	<b>U.3.</b> Initiate reissuance of the Phase 2 MS4 general permit	NOIRA	DEQ	
9/1/2017	<b>U.4.</b> Initiate reissuance of the Construction general permit	NOIRA	DEQ	
12/31/2017	<b>U.5.</b> Review four Phase 1 MS4 TMDL Action Plans	Final Approval	DEQ	
12/31/2017	<b>U.6.</b> Initiate reissuance of the Arlington County Phase 1 MS4 permit	Begin process for reissuing Phase 1 Individual permit	DEQ	
12/31/2017	<b>U.7.</b> Work with VDOT and EPA to issue an individual permit for VDOT's MS4	Issue Individual Permit	DEQ	VDOT's MS4 is currently regulated through the Phase 2 MS4 General Permit.
12/31/2017	<b>U.8.</b> Move SLAF projects that	Shorten time from project	DEQ	This program provides cost-

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	are awarded and underway towards completion and closeout. Guide projects that are presently un-awarded to award and into the construction phase.	selection to project completion		share for large scale urban BMPs and is eligible to both the regulated and unregulated urban sector
10/1/2016 10/1/2017	<b>U.9.</b> Complete testing and deployment of the “SMART” Stormwater Management and Restoration Tracker, a system to track, verify and report homeowner installed BMPs.	Report Homeowner BMPs beginning in 2016 progress	Alliance for the Chesapeake Bay - Virginia Office/DEQ	
6/30/2017	<b>U.10.</b> Nutrient management on urban turf – golf courses; develop and promote golf course nutrient management	Urban nutrient management plans completed on 330 golf courses	DCR	Item 364 B.1. of the state budget appropriates \$100,000 as cost share for this purpose
12/31/2017	<b>U.11.</b> Promote Nutrient Management on Urban Turf	Certify 6 new UNM planners; implement 6 new VA Grass roots programs; increase volunteer capacity by 60 new Master Gardeners	DCR	
7/1/2016	<b>U.12.</b> Complete development of online fertilizer sales data tracking system.	Automated fertilizer sales data tracking	VDACS	
10/1/2016 10/1/2017	<b>U.13.</b> Utilize improved fertilizer sales data. Updated fertilizer sales data will be compared to	Data developed, analyzed, and reported to DEQ	VDACS	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	historic fertilizer sales data and/or baseline as basis for continued credit for Urban Phosphorus fertilizer legislation.			
10/1/2016 10/1/2017	<b>U.14.</b> Utilize annual fertilizer application data for reporting of acres of nonagricultural lands per county under management by Certified Fertilizer Applicators (CFA) receiving fertilizer in accordance with Urban Nutrient Management standards.	Acres of nonagricultural land under management by Certified Fertilizer Applicators (CFA) reported to DEQ	VDACS	
12/31/2017	<b>U.15.</b> Establish pollutant removal efficiencies for typical roadway vegetated shoulders and drainage conveyances thereby promoting the use of such practices over those employing impervious materials	Efficiencies established and distributed to relevant contractors and government agencies	VDOT	
12/31/2017	<b>U.16.</b> Revise VDOT guidance documents to incorporate and promote the use of low impact development techniques and other innovative stormwater BMPs in roadway projects	Multiple guidance documents	VDOT	
12/31/2017	<b>U.17.</b> Continue “Stormwater Management Comparative Study of Porous Asphalt for I-66 and Route 234 Bypass Park & Ride	Study	VDOT	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	Facility” to determine /develop maintenance requirements for permeable asphalt pavement			
<b>Onsite Sewage Systems</b>				
12/31/2017	<b>OSS.1.</b> Train agency staff on new inspection, compliance, verification and enforcement procedures for alternative onsite sewage systems.		VDH	Staff will develop policy to implement civil penalties and start tracking civil penalties for every owner who fails to properly operate and maintain his or her alternative onsite sewage systems. Staff will be trained on the new policy and procedures. VDH will transitions to reporting TN reductions based on submitted annual operation and maintenance (O&M) inspection reports that confirm the alternative onsite sewage systems meet the approved BMPs for nitrogen reduction.
	<b>OSS.2.</b> Implement a Global Positioning System (GPS) guidance policy for VDH staff in order to assign spatial location information to onsite sewage systems in the state.	Capture location of all new AOSS installed in the Bay watershed during the milestone period.	VDH	VDH will focus on geolocating alternative onsite sewage systems installed in the Bay watershed that meet an approved BMP. Training on the GPS units distributed to local health departments will be provided to facilitate a consistent approach to GPS



## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
				data collection.
12/31/2017	<b>OSS.3.</b> Work with DEQ and local governments to capture and report the number of septic tank pump-outs that occur as a result of the Chesapeake Bay Preservation Act requirements (local ordinances), voluntary efforts and repairs throughout the Bay watershed.	36,000 septic tank pump-outs each year	VDH/ DEQ	The target values are a combination of the annual pump-out data submitted to DEQ by the localities within the Chesapeake Bay Preservation Act area, and an annual estimate based on VDH data of the pump-outs performed voluntarily or as part of permitted repair activities outside Bay Act localities.
13/31/2017	<b>OSS.4.</b> Report the number of alternative onsite sewage systems (AOSS) meeting the current BMPs for 20%, 38%, 50%, and 69% reduction.	13,500 lbs TN load reduction over baseline conditions at the edge of drain field during the milestone period	VDH	The nitrogen requirements in the Virginia AOSS regulation became effective in December 2013. Edge of drain field conditions will be converted to delivered loads in model reports.
13/31/2017	<b>OSS.5.</b> VDH continues to operate the VENIS database and look for ways to improve its functionality.		VDH	VDH continues to conduct extensive quality assessment and quality control of the data within the Virginia Environmental Information System (VENIS) database in order to improve our ability to deliver reliable information and to better track progress. A Request for Proposals will be

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
				developed to update or replace the existing database. The updated database will include tracking procedures for all BMPs for nutrient reductions from onsite sewage systems. VDH also plans to update reporting capabilities to better track GPS data collected according to Milestone OSS.2. above.
13/31/2017	<b>OSS.6.</b> Work with EPA and other TMDL stakeholders to better predict nitrogen losses through various soil types and treatment unit combinations in order to improve the accuracy of the Chesapeake Bay Watershed Model predictions for the onsite sector, especially for systems located above the geologic fall line.		VDH	VDH commits to participation in workshops and stakeholder group meetings to advance the initiative.
12/31/2017	<b>OSS.7.</b> Reduce repair time for failing onsite sewage systems to fewer than 60 days.	Repair at least 40% of all failing sewer systems in each health district within 60 days of when VDH becomes aware of the failure. Current estimates are that an average of 47%	VDH	VDH tracks repair time for failing sewage systems through repair permits in the VENIS database.

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
		statewide are repaired within 60 days, with individual health districts ranging from 0% to 100%.		
12/31/2017	<b>OSS.8.</b> Work with DEQ and local governments to capture and report the number of connections to public sewer.	600 sewer connections during the milestone period	VDH/DEQ	The VENIS database is capable of tracking onsite facilities that are connected to public sewer when the information is received from the locality. However, there is no requirement for the information to be reported to VDH. Discussions are planned to solicit the information from local wastewater authorities and develop a central spatial dataset of all sewer areas in the state.
<b>Forest</b>				
12/31/2017	<b>F.1.</b> Continue with BMP training sessions for forest harvesting contractors, Professional Foresters and forest landowners	4 training sessions each year	VDOF	Through VDOF programs, cooperation with the SHARP Logger Program and Cooperative Extension.
12/31/2017	<b>F.2.</b> Develop new on-line BMP training program for harvest contractors through VT Sustainable Harvesting And Resource Professional (SHARP) Logger Program focusing on	1 on-line training program each year	VDOF	

## Virginia

### **January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones**

<b>Target Date</b>	<b>Milestone (WIP page reference)*</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
	underutilized harvesting BMPs and considerations for biomass harvesting practices			
12/31/2017	<b>F.3.</b> Continue BMP implementation monitoring to determine BMP rates being applied to forest harvest sites within the Bay Watershed through funding provided by a CBRAP Grant	Annual Monitoring Report due in February of each year	VDOP	Monitoring meets the criteria set out in the Southern Group of State Foresters BMP Implementation Monitoring Protocol.
12/31/2017	<b>F.4.</b> Provide cost-share to forest harvesting contractors to implement BMPs (Phase I WIP, pg. 110)	Individual Stream crossings and approaches treated, 30 projects funded annually	VDOP	Dependent on funding from the Water Quality Improvement Fund
12/31/2017	<b>F.5.</b> Continue enhanced enforcement of the Virginia Silvicultural Water Quality Law in the Chesapeake Bay Watershed utilizing CBRAP grant funding	Enforcement on 100% of harvest sites based upon agency established procedures and harvest inspection of each harvest site	VDOP	
12/31/2017	<b>F.6.</b> Provide cost-share funding to those landowners to establish riparian forest buffers that would not otherwise qualify for cost-share funding through federal programs (Phase I WIP, pg. 62)		VDOP	Dependent on funding from the Water Quality Improvement Fund

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

<b>Target Date</b>	<b>Milestone (WIP page reference)*</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
12/31/2017	<b>F.7.</b> Slow the loss of forestland conversion and associated water quality benefits resulting from necessary municipal infrastructure development (Phase II WIP, pg. 33)	Integrating DOF forestland loss mitigation assessments of proposed development projects into ongoing state environmental impact review (EIR) processes	VDOF	2000 acres of avoided forestland conversion goal achieved
12/31/2017	<b>F.8.</b> Continue to focus riparian forest buffer establishment efforts in Potomac River Watershed and expand these efforts to the northern piedmont through the hiring of Buffer Specialists to work with NRCS, FSA, DCR, VDOF, SWCD and other partners through a focused riparian forest buffer - GIS targeting and CREP initiative (Phase I WIP, pg. 62)	Target three specific watersheds to concentrate RFB CREP establishment two in the Shenandoah Valley and one in the Central Piedmont of Virginia	VDOF	Funding for the positions is being provided through a grant from FSA through USDA Forest Service Region 8
12/31/2017	<b>F.9.</b> Permanently conserve forestland through permanent conservation easements or acquisition (Phase II WIP, pg. 34)	Conserve 1200 acres annually across the Virginia portion of the Bay Watershed	VDOF	Dependent on federal funding and easement donations from private landowners
12/31/2017	<b>F.10.</b> Identification of incentives and drivers to assist communities directing growth away from key forestland assets such as groundwater recharge areas, intact and productive forests, and	Discussions with pilot area localities to encourage adoption of policies directing growth away from key forestland assets	VDOF	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	wildlife corridors to ensure forestland economic and ecosystem values are considered and weighed against competing land use options in land development decisions (Phase II WIP, pg. 34)			
12/31/2016	<b>F.11.</b> Initiation of dialogue with EPA, Bay jurisdictions, and others to determine the feasibility of achieving credited TMDL nutrient or sediment reductions from conserving existing forestland in the context of the Chesapeake Bay model (Phase II WIP, pg. 34)	Convene a group comprised of EPA, Bay jurisdictions, state agencies, and other stakeholders to initiate a dialogue that focuses on valuing conservation of existing forestland in the Chesapeake Bay model	DEQ/VDOF	
<b>Industrial Stormwater</b>				
9/1/2017	<b>IS.1.</b> Initiate reissuance of the Industrial Stormwater General Permit	NOIRA	DEQ	
<b>Wastewater</b>				
9/01/2016	<b>W.1.</b> Compete reissuance of the Watershed General Permit	Final Permit	DEQ	
1/1/2017	<b>W.2.</b> Process Registrations for reissued Watershed General Permit		DEQ	
6/30/2017	<b>W.3.</b> Implement sampling plan for non-significant dischargers	2000 effluent nutrient samples from a stratified random sample of 541	DEQ	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
		non-significant permittees		
<b>Local Engagement</b>				
6/30/2016	<b>LE.1.</b> Complete the development of 1-meter land cover classification for the Bay watershed	Publicly available land cover dataset	DEQ/VGIN	
6/30/2016	<b>LE.2.</b> Develop a communications strategy for engaging local stakeholders in WIP 3 planning, implementation and progress reporting (Phase II WIP, pg. 42)		DEQ	
<b>Federal Facilities</b>				
12/31/2017	<b>FF.1.</b> NASA Langley Research Center plans to implement several land conversion projects and a street sweeping program in the milestone period.	7.4 acres impervious converted to unfertilized grass 3 acres of turf converted to hardwood forest	NASA Langley Research Center	
12/31/2017	<b>FF.2.</b> Continue to work closely with federal facilities implementing the “Chesapeake Bay Program Protocol for Setting Targets, Planning BMPs and Reporting Progress for Federal Facilities and Lands”	Engagement of federal facilities in Bay planning, implementation and progress reporting	DEQ/Federal Facilities	
<b>Trading and Offsets</b>				
12/31/2016	<b>TO.1.</b> Expansion of Existing	Revised proposed	DEQ	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	Nutrient Credit and Stormwater Offset program (Phase I WIP, Page 12)	regulations for nonpoint source credit certification presented to the State Water Control Board with the intention of having final regulations effective by the end of 2017.		
12/31/2016	<b>TO.2.</b> Continue development of online nutrient credit registry		DEQ	
12/31/2017	<b>TO.3.</b> Continue to work with EPA to demonstrate that sector load growth is accounted for.		DEQ	
<b>Verification</b>				
6/30/2016	<b>V.1.</b> Update Verification Program Plan (DEQ QAPP) for EPA Approval.	EPA Approved Plan	DEQ	
9/30/2016	<b>V.2.</b> Complete comprehensive evaluation of historical implementation data to assess data quality and update accordingly for use in Phase 6.model calibration	Final data sets reflecting on-the-ground implementation levels through time	DEQ	
12/31/2017	<b>V.3. Update</b> DCR QAPP to align with Verification Program Plan.	Approved QAPP	DCR/DEQ	
12/31/2017	<b>V.4. Develop</b> QAPPs or SOPs for state agency data providers to align with Verification Program Plan.	Links to documents added to Verification Program Plan	VDH/VDACS/DEQ	



## Virginia

### **January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones**

<b>Target Date</b>	<b>Milestone (WIP page reference)*</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
12/31/2017	<b>V.5.</b> Work with non-state data providers to document SOPs in accordance with Verification Program Plan	Links to documents added to Verification website	DEQ	
10/1/2016	<b>V.6.</b> Develop and implement a 1619 work around to allow reporting of NRCS/FSA data for annual progress and Phase 6 model calibration	Resume reporting of NRCS/FSA implementation data	DEQ/DCR	
12/31/2017	<b>V.7.</b> Seek 2016 WIP Assistance Funding for the development of a Verification SOP template that can be completed by non-state data providers to satisfy Verification Program Plan requirements		DEQ	
12/31/2017	<b>V.8.</b> Seek 2016 WIP Assistance Funding for the development of practice specific BMP inspection guidance and checklists for use by data providers		DEQ	
12/31/2016	<b>V.9.</b> Hire and train 4 additional DEQ water compliance inspectors		DEQ	
12/31/2017	<b>V.10.</b> Implement Compliance Monitoring Strategy to ensure permit conditions, including procedures for BMP inspection		DEQ	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

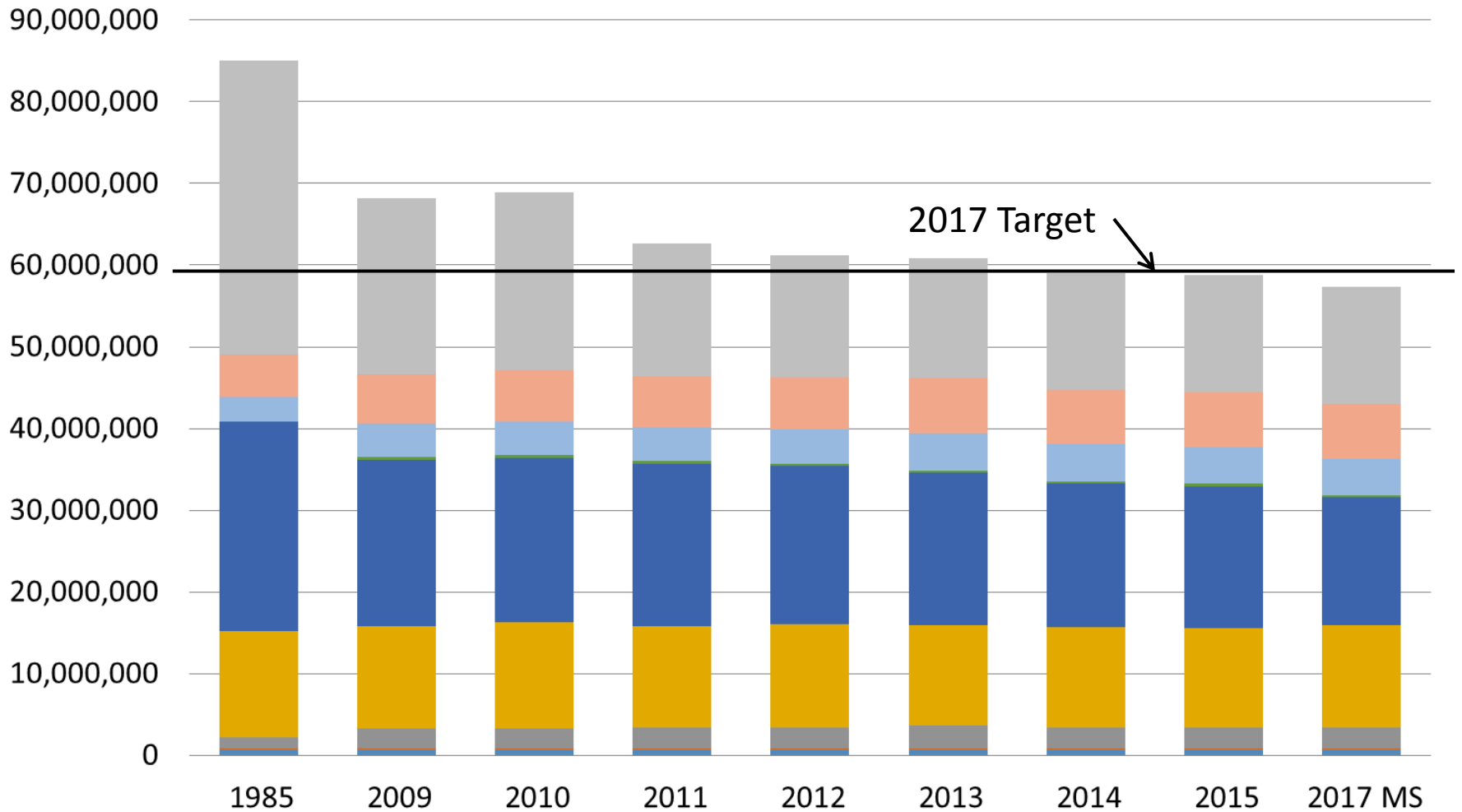
Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	and maintenance, are being followed.			
6/30/2016	<b>V.11.</b> Agricultural BMP verification	Complete 34 conservation tillage surveys, and 1400 or more voluntary structural BMP inspections	DCR	
12/31/2017	<b>V.12.</b> Verify agricultural nutrient management plan consistency	Annually Survey and report on > 10%/year of all active DCR agricultural nutrient plans for consistency	DCR	
<b>James River Phased Implementation/Chlorophyll Study</b>				
12/31/2017	<b>JR.1.</b> Continue to hold meetings of the Stakeholder Advisory Group (SAG) to serve the role of the Regulatory Advisory Panel for potential changes to water quality standards		DEQ	
1/31/2016	<b>JR.2.</b> Continue development of empirical relationships between HAB measures and designated use attainment	Final Draft <i>Empirical Relationships Linking Algal Blooms with Threats to Aquatic Life Uses in the James River Estuary</i> Report	DEQ	
2/29/2016	<b>JR.3.</b> Utilize model to assess chlorophyll-a criteria alternatives, including the	<i>Scenario and Alternatives Analysis Report</i>	DEQ	

## Virginia

### January 1, 2016 – December 31, 2017 Final Programmatic Two-Year Milestones

Target Date	Milestone (WIP page reference)*	Deliverable	Lead Agency	Comments/Status Updates
	existing standards			
2/29/2016	<b>JR.4.</b> Continue development of models for indicators, nutrient inputs and HABs (Phase I WIP, pg. 9)	<i>Final Model Study Report</i>	DEQ	
12/31/2017	<b>JR.5.</b> Initiate establishment of facility-specific wasteload allocations necessary to achieve the remaining load reductions needed to meet the applicable Chlorophyll-a criteria		DEQ	
* As part of the adaptive management process for achieving water quality goals, jurisdictions may submit programmatic milestones that modify, are in place of, or are in addition to milestones listed in their WIPs so long as the jurisdiction can demonstrate that they will be as effective toward meeting water quality goals.				

# Virginia Delivered Nitrogen Loads



Non-Tidal Water Deposition

WasteWater-CSO

Septic

Forest

Agriculture

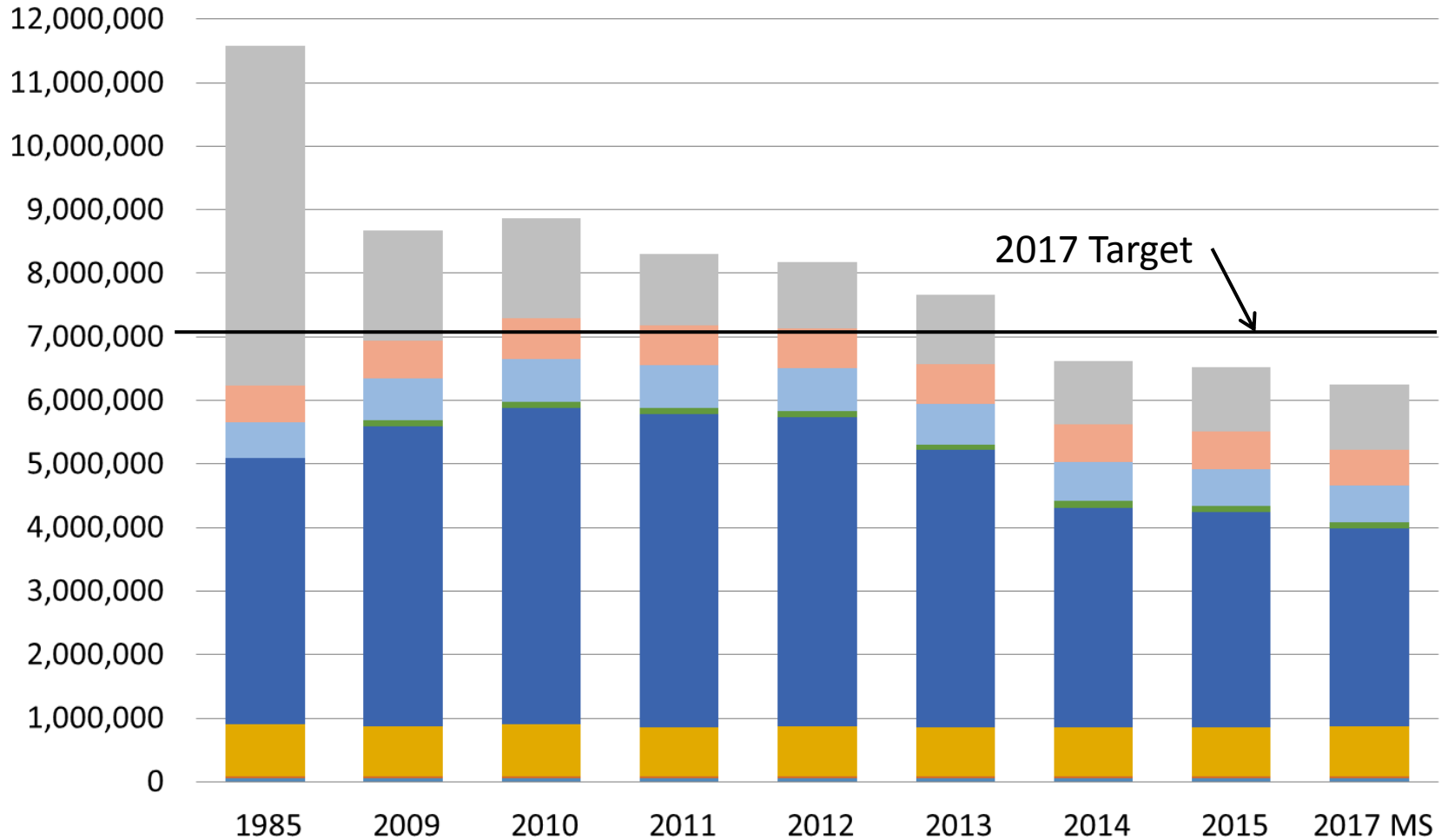
Agriculture\_Regulated

NonRegulatedStormwater

RegulatedStormwater

PS

# Virginia Delivered Phosphorus Loads



Non-Tidal Water Deposition

WasteWater-CSO

Septic

Forest

Agriculture

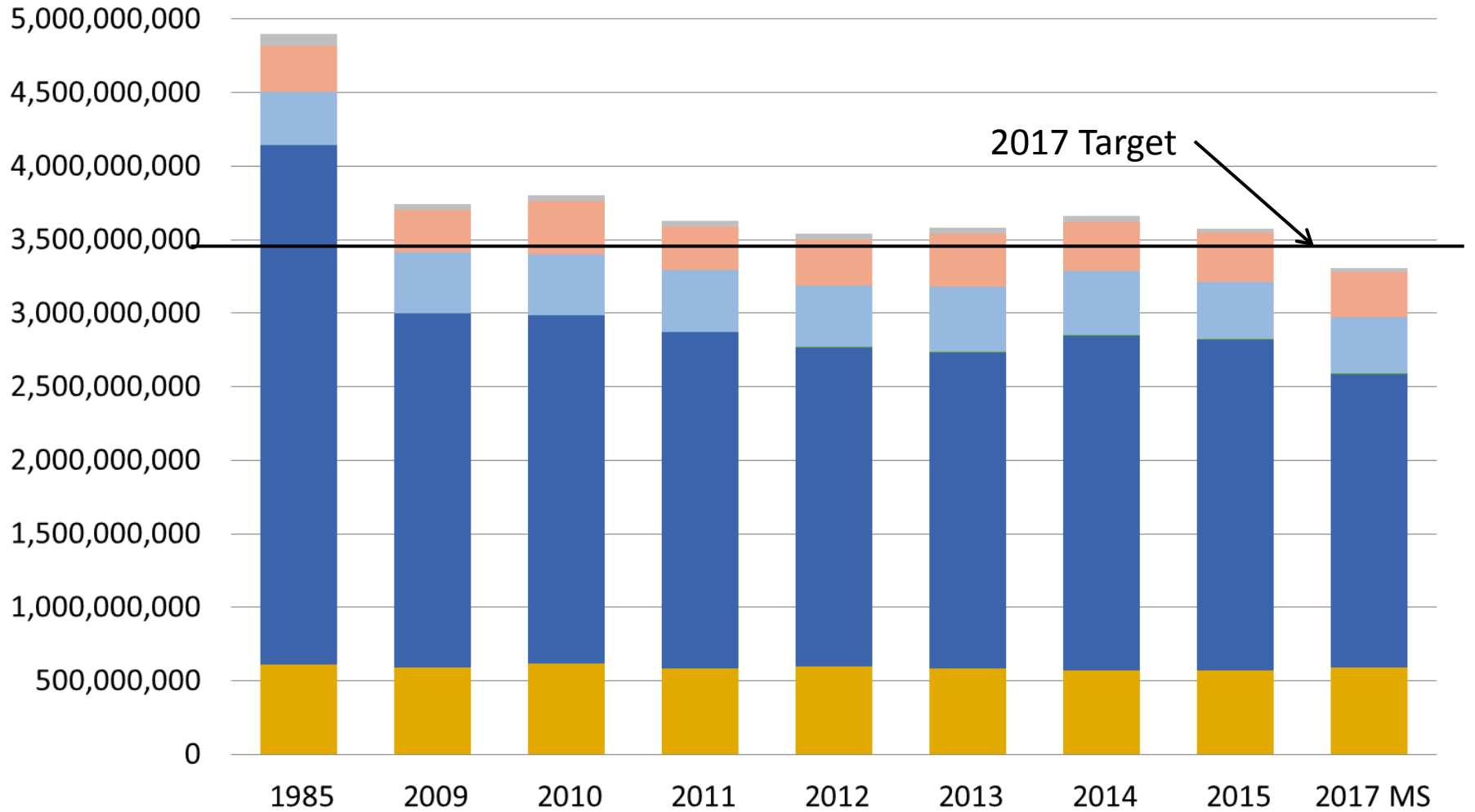
Agriculture\_Regulated

NonRegulatedStormwater

RegulatedStormwater

PS

# Virginia Delivered TSS Loads



Non-Tidal Water Deposition

WasteWater-CSO

Septic

Forest

Agriculture

Agriculture\_Regulated

NonRegulatedStormwater

RegulatedStormwater

PS

## BMP Implementation

3/16/16		2009	2014	2015	2015	2017	2025
		Progress	Progress	Progress	Milestone	Milestone	WIP
<i>Agriculture Practices</i>	Unit	VA	VA	VA	VA	VA	VA
Nutrient Application Management on Crop	acres	515,275	541,026	3,527	0	5,000	530,947
Decision Agriculture	acres	0	0	0	50,000	0	157,869
Enhanced Nutrient Application Management	acres	0	0	0	750,000	0	67,715
Tier 2 Nutrient Application Management on Crop	acres			510,752		780,000	
Tier 3 Nutrient Application Management on Crop	acres			7,004		25,000	
Crop Nutrient Management	acres	515,275	541,026	521,282	800,000	810,000	756,531
Nutrient Application Management on Pasture	acres	59,986	57,345	51,349	0	65,000	406,550
Enhanced Nutrient Management on Pasture	acres	0	0	0	100,000	0	0
Conservation-Till Specialty Crops	acres	0	0	0	2,505	5,030	25,012
High Residue Tillage	acres	33,995	98,009	98,673	119,552	117,570	304,400
Conservation Tillage including High Residue Tillage	acres	409,971	448,534	423,331	416,000	525,000	515,078
Cover Crop	acres	53,946	80,798	83,557	129,364	218,418	232,649
Commodity Cover Crop	acres	25,869	25,346	24,999	46,944	66,255	76,210
Cover Crops	acres	79,815	106,144	108,556	176,308	284,673	308,859
Pasture Alternative Watering	acres	20,531	87,608	87,693	75,000	87,725	13,917
Prescribed Grazing	acres	239,065	313,369	330,430	346,050	371,125	534,265
Precision Intensive Rotational Grazing	acres	0	0	0	0	0	0
Horse Pasture Management	acres	0	65	67	35	77	23,570
Stream Access Control with Fencing	acres	33,866	66,612	51,879	78,744	57,859	56,029
Pasture Management	acres	293,462	452,674	470,068	479,545	516,786	627,781
Forest Buffers on Fenced Pasture Corridor	acres	13,678	13,680	13,679	13,732	13,697	19,623
Grass Buffers on Fenced Pasture Corridor	acres	19,918	12,849	13,121	22,835	57,859	31,927
Forest Buffers	acres	3,154	6,062	6,172	6,114	6,843	79,814
Wetland Restoration	acres	214	452	452	420	906	19,215
Land Retirement	acres	81,605	93,273	96,762	94,536	98,596	122,824
Grass Buffers	acres	10,362	13,269	14,331	16,142	13,376	109,032
Tree Planting	acres	16,216	29,596	29,668	30,405	29,929	107,108
Carbon Sequestration	acres	0	0	0	0	0	0
Conservation Plans	acres	926,165	1,137,560	1,134,269	1,349,548	1,269,603	1,883,053
Water Control Structures	acres	0	182	182	159	182	700

## BMP Implementation

[illegible]



## BMP Implementation

		2009	2014	2015	2015	2017	2025
		Progress	Progress	Progress	Milestone	Milestone	WIP
<i>Urban/Suburban Practices</i>	Unit	VA	VA	VA	VA	VA	VA
Runoff Reduction Performance Standard	acres	0	0	23	0	23	0
Storm Water Treatment Performance Standard	acres			2		2	
Wet Ponds & Wetlands	acres	156,707	181,135	183,152	179,237	191,602	177,773
Dry Ponds	acres	136,123	153,940	154,723	153,550	164,232	85,554
Extended Dry Ponds	acres	64,820	75,117	75,371	73,876	80,481	160,881
Infiltration Practices	acres	1,588	2,078	2,284	1,957	3,201	69,127
Filtering Practices	acres	4,927	6,323	6,408	6,203	6,910	65,868
BioRetention	acres	0	552	735	835	1,100	22,352
BioSwale	acres	0	10	91	16	137	1,144
Permeable Pavement	acres	0	8	9	5	16	52
Vegetated Open Channel	acres	0	8	17	15	31	3,283
SWM by Era (1985-2002)	acres	0	0	0	0	0	0
SWM by Era (2002-2010)	acres	0	0	0	0	0	0
Retrofit Stormwater Management	acres	0	0	0	0	0	0
Stormwater Management	acres	364,165	419,171	422,814	415,694	447,735	586,033
Erosion and Sediment Control	acres	26,975	30,385	32,919	17,524	43,102	29,948
Extractive Erosion and Sediment Control	acres	0	0	21,653	24,000	24,000	2,974
Forest Conservation Act	acres	0	1,006	1,006	0	1,006	14,128
Impervious Surface & Urban Growth Reduction	acres	3	126	126	131	137	24,779
Urban Forest Buffers	acres	0	77	77	77	155	4,115
Urban Tree Planting	acres	0	8	8	2	15	799
Urban Nutrient Management	acres	20,934	20,260	19,916	60,000	69,000	517,058
Abandoned Mine Reclamation	acres	970	1,184	14,051	1,797	11,704	29,247
Street Sweeping	acres	632	0	0	0	0	24,040
Street Sweeping	lbs	0	426,671	5,832,973	250,000	5,832,973	0
Urban Phosphorus Fertilizer Reduction	% acres @ % P reduction	0	100% @ 70%	100% @ 70%	100% @ 70%	100% @ 70%	0
Urban Stream Restoration	feet	0	191,133	191,133	187,378	198,108	116,399
Urban Shoreline Erosion Control	feet	0	1,984	1,988	0	2,430	0
Septic Connections	systems	2	556	625	607	1,245	42,224
Septic Denitrification	systems	0	1,101	1,714	600	2,643	81,433
Septic Pumping	systems	14,083	25,303	13,455	35,908	36,567	68,432
<i>Resource Practices</i>	Unit						
Forest Harvesting Practices	acres	187,293	82,732	72,004	82,430	118,412	87,305
Dirt&Gravel Road E&S	feet	0	1,738	1,738	0	1,738	4,807